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**HIGH  
SPEED  
RANGE** **M** **"MAJOR"**  
PRECISION LATHE

Maximum length between centres .. ..	24"
Maximum swing over bed .. .. .	12½"
Maximum swing over carriage .. ..	6⅝"



Catalogue H5  
**HOLBROOK**

## *A modern precision production lathe*

### **HOLBROOK 'MAJOR' HIGH-SPEED LATHE**

The traditional association of the name Holbrook with the ideals of craftsmanship in the sphere of precision lathe manufacture has been continued by the introduction of the 'M' range of high-speed machines. A policy of continuous research and progressive development upheld by a Company alive to the changing needs of industry and backed by Herbert resources, has resulted in the successful combination of well-proved, basic principles with the use of modern devices. The alliance has been achieved with the added advantages of contemporary design.

The 'MAJOR' is a precision production lathe in the design of which a high-speed range has been combined with the rigidity and rugged operational characteristics common to other Holbrook products.

The spindle drive is taken from a single-speed, constant-torque motor through a gearbox controlled by electro-magnetic clutches. Final drive through multiple vee belting to a separately-mounted spindle pulley ensures smooth, vibrationless operation without imposing tension on the forged steel, hardened and ground spindle. Mounted in precision tapered-roller bearings which are force-lubricated with filtered oil, the spindle is provided with a DI-5" Cam-lock nose for the rapid removal and accurate replacement of chucks, faceplates or other fixtures.

The machine is arranged with a choice of 12 spindle speeds, forward and reverse, in two ranges of six. The low range is obtained through hardened and ground nickel-chrome gearing; the high-range by open belt drive. Either range can be selected by lever operation. The main new feature on this lathe is the instantaneous speed change device which, requiring only light finger pressure on the appropriate button in the selection panel, effects immediate response within either of the two ranges. The chosen speed is also indicated by illumination of the button.

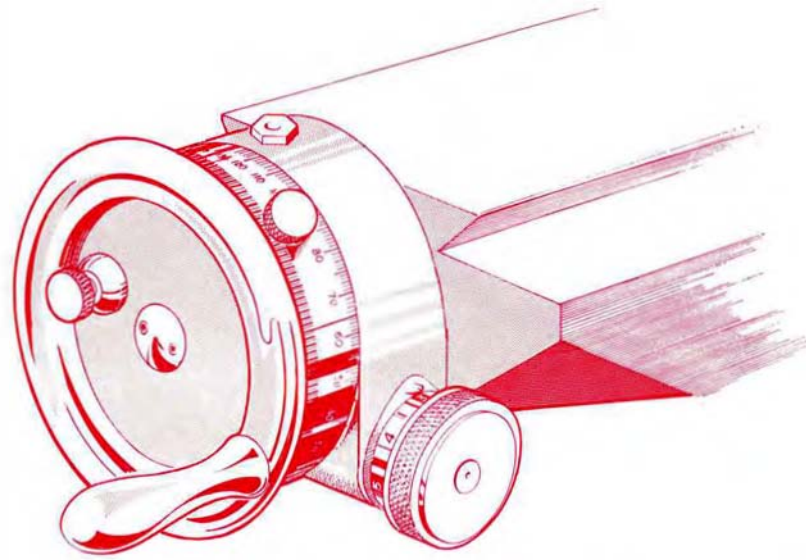
The totally-enclosed gearbox of the 'MAJOR' allows the selection of 60 different pitches or feeds from one combination lever control. As on other lathes of Holbrook manufacture, the leadscrew is intended for threadcutting operations only and can be disengaged during normal turning operations involving the use of the feedshaft. Leadscrew thrust is absorbed by a Holbrook patented bearing.

The carriage with wide mating surfaces traverses on hardened raised-vee and flat ways. All slides are fitted with adjustable taper gibs for the maintenance of accuracy and rigidity with the retention of easy movement so essential on this type of machine.

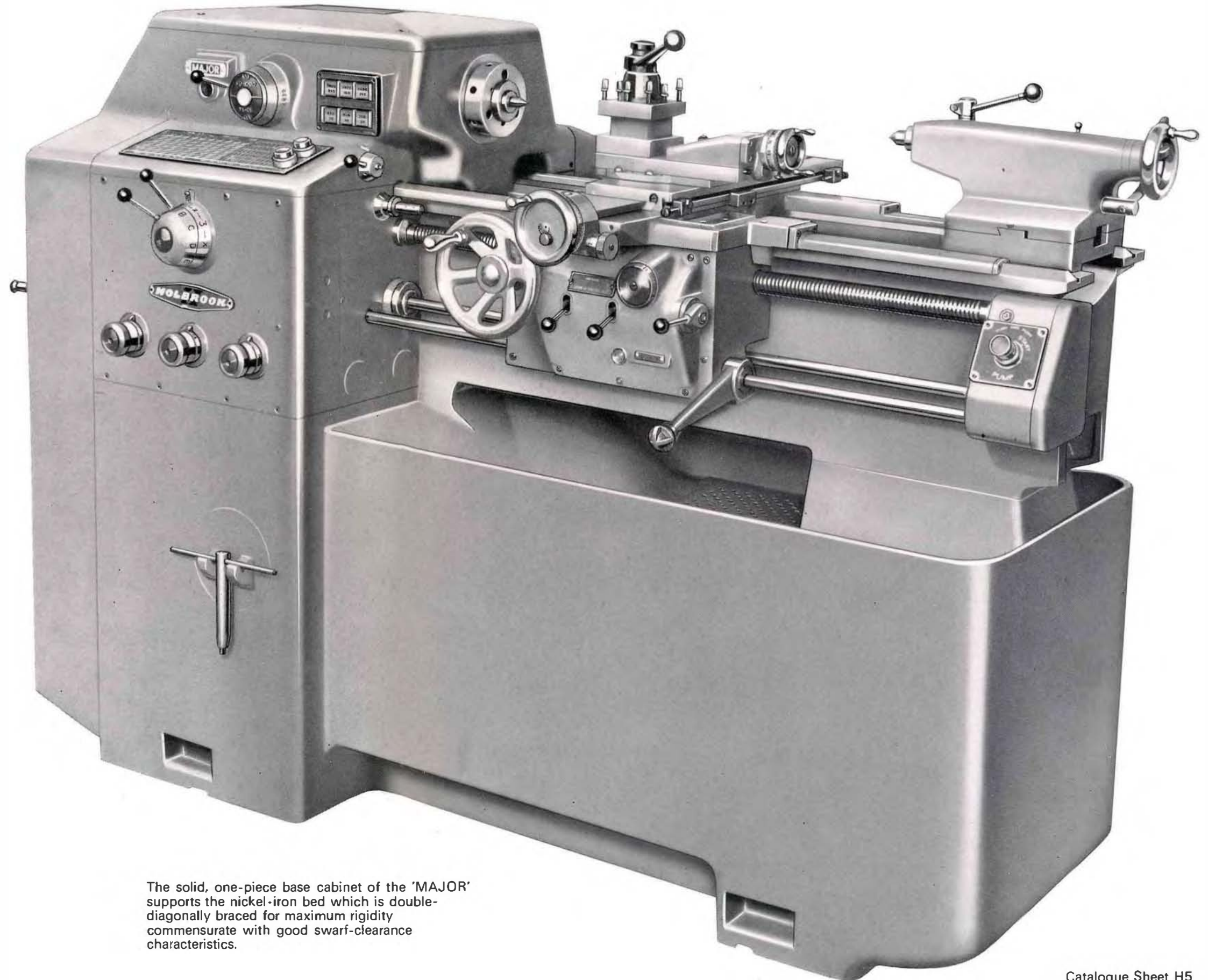
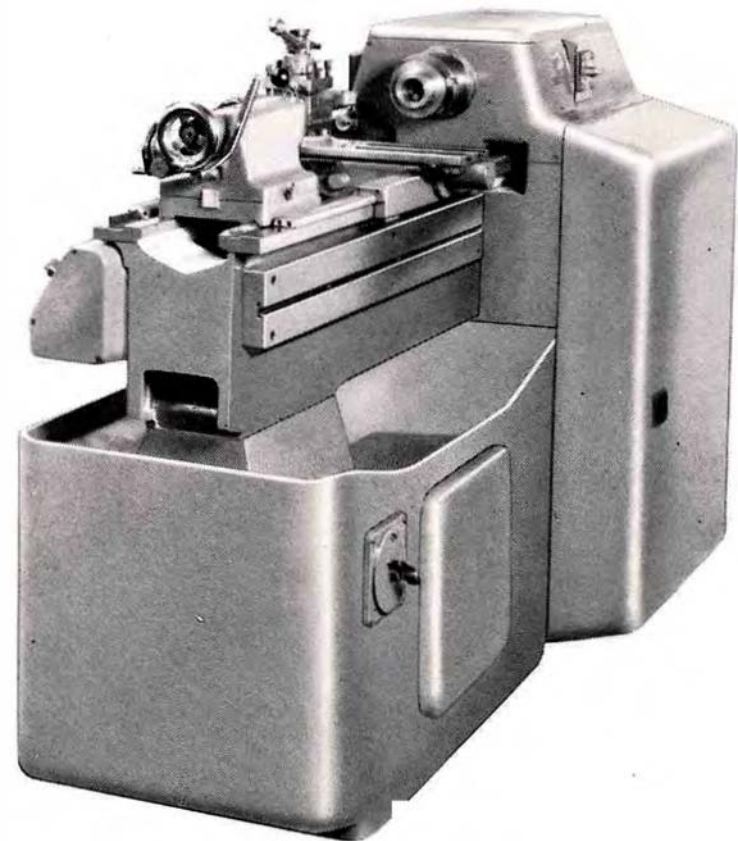
The standard machine is fitted with a square turret which, on release of the steel locking lever, is automatically raised to allow rotation in either direction before relocking in any of sixteen positive positions. The top slide carrying this turret can be swivelled through 360°. Sliding and surfacing motions are each controlled by a precision screw and handwheel with large micrometer-graduated dials.

The double-walled apron incorporates sliding and surfacing feed controls designed for instantaneous and smooth engagement. The feed drive incorporates a clutch to prevent damage through overloading and also an interlock between the sliding and threading motions. The apron also incorporates a threading dial for use as an accurate guide in re-engagement of the threading tool.





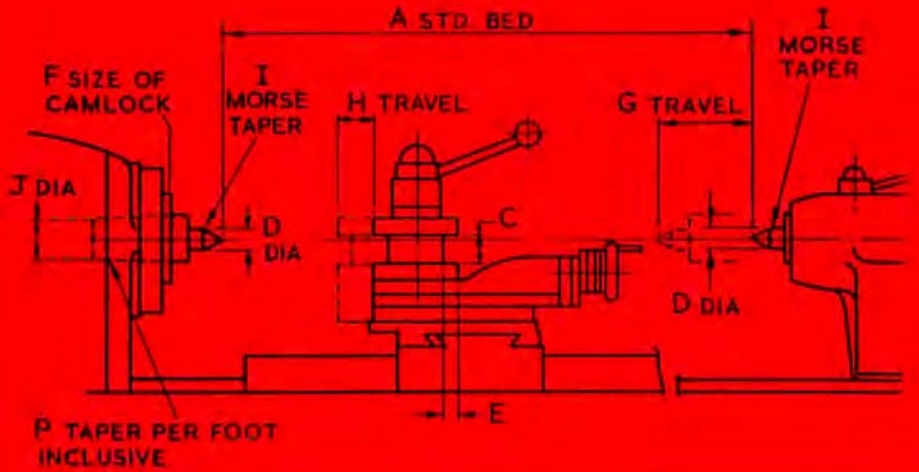
A threading stop incorporated in the surfacing motion allows the retraction of the tool and its subsequent return to a pre-set stop, the position of which can be varied by rotation of a dial graduated in thousandths of an inch. This feature is brought into operation by the application of the knurled knob set in the face of the surfacing motion handwheel and can be instantly disengaged when not required.



The solid, one-piece base cabinet of the 'MAJOR' supports the nickel-iron bed which is double-diagonally braced for maximum rigidity commensurate with good swarf-clearance characteristics.



# Capacity



## Centres

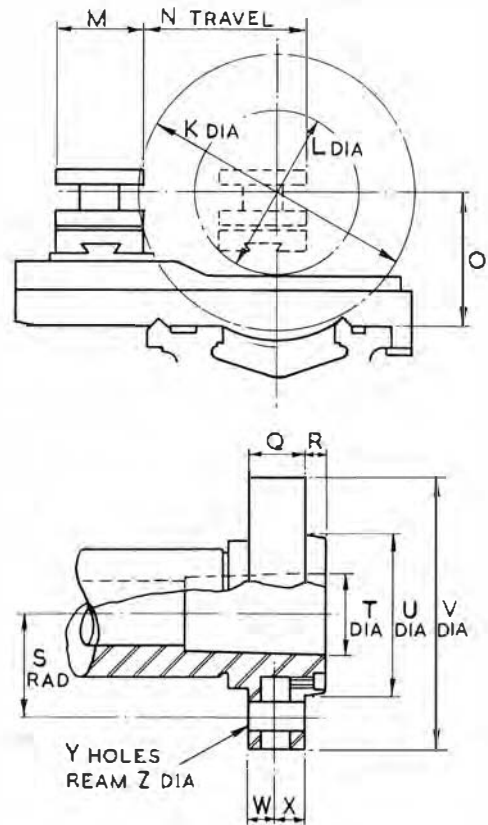
	'MAJOR'	
	English	Metric
A	24"	609.60 mm.
C	1 1/8"	28.57 mm.
D	.938"	23.82 mm.
E	9/16"	14.28 mm.
F	D1-5"	D1-127.0 mm.
G	5"	127.00 mm.
H	2 1/2"	63.50 mm.
I	No. 3	No. 3
J	1 1/4"	31.75 mm.

## Swing

K	12 1/4"	311.15 mm.
L	6 3/4"	171.45 mm.
M	3 3/8"	95.25 mm.
N	8"	203.20 mm.
O	6"	152.40 mm.

## Cam-lock Nose

P	.625"	15.875 mm.
Q	1 3/8"	44.45 mm.
R	1/2"	12.70 mm.
S	2 1/8"	52.38 mm.
T	1.4375"	36.51 mm.
U	3.250"	82.55 mm.
V	5 3/4"	146.05 mm.
W	1 5/16"	23.81 mm.
X	1 5/16"	20.63 mm.
Y	6	6
Z	3 5/8"	19.84 mm.



## Threads and Feeds

DIAL	THREADS AND FEEDS											T.P.I. FEED	MILLIMETRE PITCHES.											MAINS
	A	B	C	D	E	F	G	H	J	K	DIAL		A	B	C	D	E	F	G	H	J	K		
3	2 1/8	2 1/8	2 1/8	2 1/8	2 1/8	2 1/8	2 1/8	2 1/8	2 1/8	2 1/8	2 1/8	1	6.4	7.2	7.6	8	8.8	9.2	9.6	10.4	11.2	12	START	
X 2	4	4 1/2	4 1/2	5	5 1/2	5 1/2	6	6 1/2	7	7 1/2	8	X 2	3.2	3.6	3.8	4	4.4	4.6	4.8	5.2	5.6	6		
1	8	9	9 1/2	10	11	11 1/2	12	13	14	15	16	3	1.6	1.8	1.9	2	2.2	2.3	2.4	2.6	2.8	3	STOP	
Y 3	16	18	19	20	22	23	24	26	28	30	32	Y 1	.8	.9	.95	1	1.1	1.15	1.2	1.3	1.4	1.5		
2	32	36	38	40	44	46	48	52	56	60	64	Y 2	.4	.45	.475	.5	.55	.575	.6	.65	.7	.75		
1	64	72	76	80	88	92	96	104	112	120	128	3	.2	.225	.237	.25	.275	.287	.3	.325	.35	.375		

BEFORE MOVING THREAD DIAL SET LOWER L.H. KNOB TO OUT GEAR DRIVE TO BE IN WHEN X RANGE T.P.I. AND PITCHES ARE REQUIRED


# HOLBROOK

## 'MAJOR' PRINCIPAL DATA

<b>Range</b>	Length between centres .. .. .	24" (610 mm.)
	Height of centres above flat way .. .. .	6" (152 mm.)
	Swing over bed .. .. .	12½" (311 mm.)
	Swing over carriage .. .. .	6⅝" (168 mm.)
	Top slide travel .. .. .	2½" (64 mm.)
	Max. tool section .. .. .	¾" x ⅝" (19 mm. x 9 mm.)
	<b>Headstock</b>	Number of spindle speeds .. .. .
Range of spindle speeds r.p.m. .. .. .		30-3000
Alternative speed range r.p.m. .. .. .		20-2000
Motor H.P. .. .. .		5-2800 r.p.m.
Spindle bore diameter .. .. .		1¼" (32 mm.)
Centre sleeve bore taper (Morse) .. .. .		No. 3
Cam-lock spindle nose .. .. .		DI-5"
<b>Gearbox</b>	Number of pitches .. .. .	60
	Range of pitches t.p.i. .. .. .	2-120
	Number of feeds .. .. .	60
	Range of feeds .. .. .	0.0005" to 0.033" per rev.
	Leadscrew diameter .. .. .	1½" (32 mm.)
	Leadscrew t.p.i. .. .. .	4
	Leadscrew nut length .. .. .	2½" (64 mm.)
<b>Tailstock</b>	Quill diameter .. .. .	1½" (38 mm.)
	Quill travel .. .. .	5" (127 mm.)
	Morse taper of bore .. .. .	No. 3
<b>Overall Dimensions</b>	Approx. length .. .. .	6' 3" (1905 mm.)
	" width .. .. .	2' 11" (889 mm.)
	" height .. .. .	4' 2" (1270 mm.)
<b>Weights</b>	Standard lathe and equipment .. .. .	3360 lb. (1550 kg.)
	Standard lathe and equipment (boxed) .. .. .	3920 lb. (1740 kg.)
	Codeword .. .. .	..
<b>Standard Equipment</b>	Face-plate, Knock-out Bar, Operator's Instructions, Oil Gun, Necessary Wrenches	

The wide range of attachments available for use on this lathe includes thread chasing, taper turning, spherical turning, grinding and hydraulic profiling equipment (illustrated). Spindle speed reduction units and various types of toolbox are also available.



**HOLBROOK MACHINE TOOL CO. LTD.**  
CAMBRIDGE ROAD, HARLOW,  
ESSEX, ENGLAND.  a member of  
the HERBERT group

Alterations in design are necessarily the outcome of progressive manufacture, therefore specification is subject to change without notice